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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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NEAL

Application of: Patel, *et al.*

Serial No.: 10/060,109

Art Unit: 1746

Filed: January 28, 2002

Examiner: To be assigned

For: METHODS AND COMPOSITIONS FOR  
TREATING A SUBSTRATE USING  
FOAM TECHNOLOGY

Attorney Docket No.: 8317-0129-999

**SECOND PRELIMINARY AMENDMENT UNDER 37 C.F.R. § 1.115**

**Box Patent Application**

Assistant Commissioner for Patents  
Washington, D.C. 20231

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TC 1700

Sir:

In accordance with 37 C.F.R. § 1.115, please consider and enter the following preliminary amendment and remarks.

**AMENDMENT**

**To the Specification**

A marked-up version of the revised paragraph is attached hereto as an Appendix.

Please amend the specification as follows:

*Replace the paragraph beginning at page 5, line 16 and ending at page 5, line 27, with the following paragraph:*

B1  
An example of a physical means of removing particles is buoyancy. Buoyancy is illustrated in Japanese Patent No. 63-239820-A2 and U.S. Pat. No. 4,817,652, where it was shown that gas bubbles could lift dust particles away from the surface of a semiconductor substrate. Gas bubble formation in liquid solution was induced around dust particles, and the buoyancy of the gas bubble released and lifted the particle from a substrate to the surface of the solution. Surface tension forces were described as part of the particle removal mechanism in that the

B1  
film encasing the bubble would rapidly converge underneath the particle and detach the particle from the surface of the substrate. Thus, a buoyant force is used to overcome an adhesive force. If the surface tension between the liquid and the substrate is lower than that between the liquid and the particle, the liquid will prefer to remain attached to the substrate. Consequently, the liquid will prefer to pass between the particle and the substrate rather than just pass over the particle.

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